PCI2310
User's Manual

Beijing ART Technology Development Co., Ltd.

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Chapter 1 Overview

PCI2310 is an opto-isolator input and output board, mainly used for industrial control and related fields.

Unpacking Checklist

Check the shipping carton for any damage. If the shipping carton and contents are damaged, notify the local dealer or sales for a replacement. Retain the shipping carton and packing material for inspection by the dealer.

Check for the following items in the package. If there are any missing items, contact your local dealer or sales.

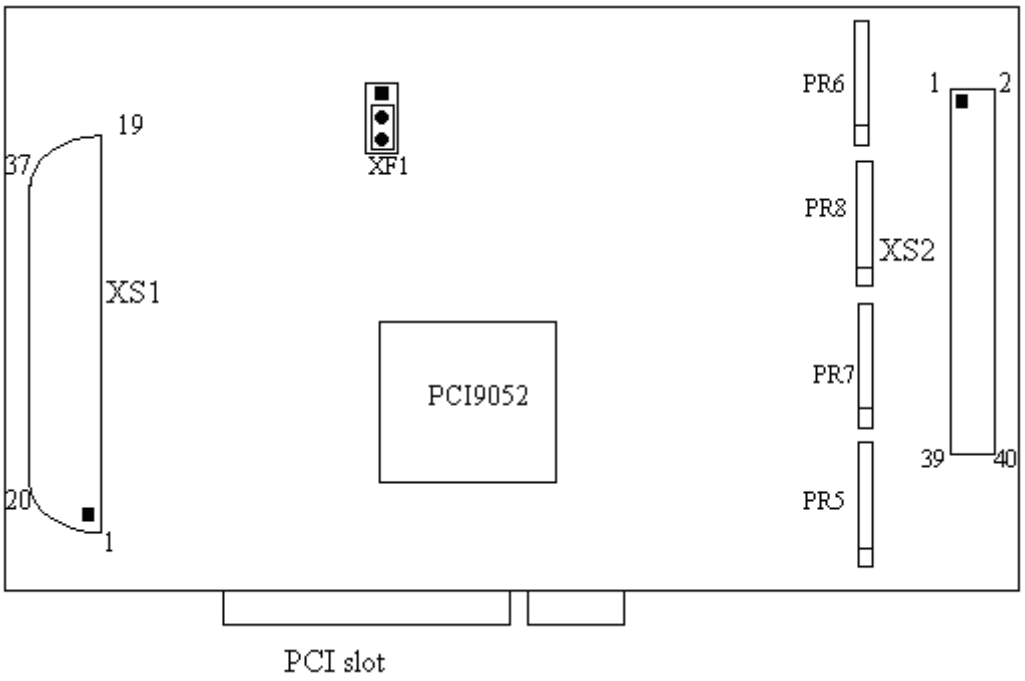
- PCI2310 Data Acquisition Board
- ART Disk
  a) user's manual (pdf)
  b) drive
  c) catalog
- Warranty Card

FEATURES

- 32-ch isolated digital input
- 32-ch isolated digital output
- Maximum input and output signals switching frequency: 10kHz (square wave)
- Input and Output Range: 5V～24V
- Isolation Voltage: input 3500Vrms(Min)
  output 2500Vrms(Min)
- Operating Temperature Range: 0℃～55℃
- Storage Temperature Range: -20℃～70℃
- Humidity: 40～90%

Chapter 2 Components Layout Diagram and a Brief Description

2.1 The Main Component Layout Diagram



2.2 Jumper and Interface Description

Please refer to the first section of the main component layout diagram, to understand the general function of the following main components.

XF1: Select DI0 input trigger interrupt type

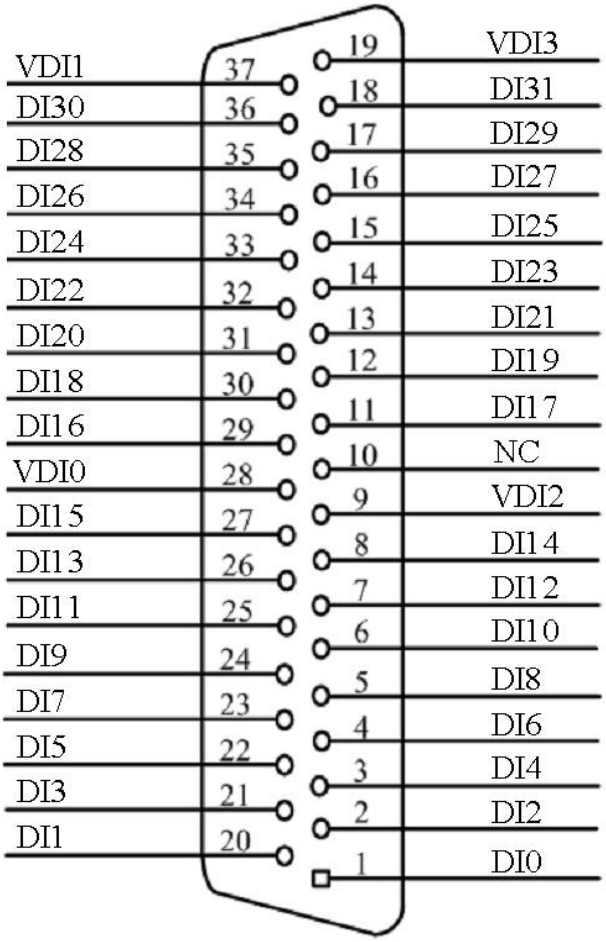
1-2 shorted: use interrupt (rising edge trigger)

2-3 shorted: do not use interrupt

XS1: Input port

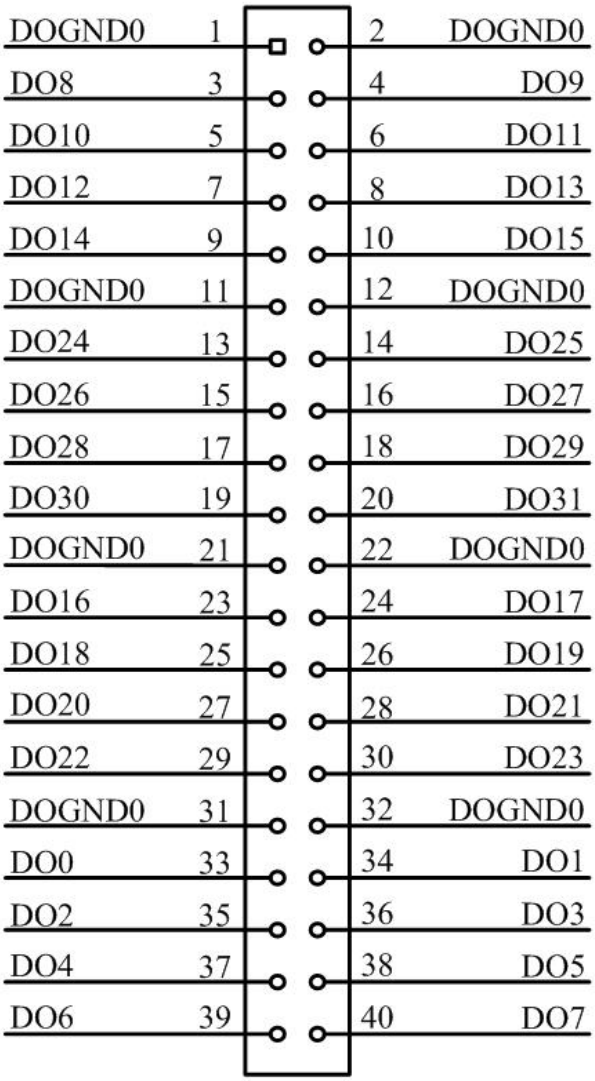
XS2: Output port

37 core plug on the XS1 pin definition



Pin definition

Signal Name	Type	Definition
DI0～DI7	Input	Digital signal input pins, VDI0 provides power (5V~24V)
DI8～DI15	Input	Digital signal input pins, VDI1 provides power (5V~24V)
DI16～DI23	Input	Digital signal input pins, VDI2 provides power (5V~24V)
DI24～DI31	Input	Digital signal input pins, VDI3 provides power (5V~24V)
VDI0	Input	External power supply, power supply for the DI0 ~ DI7
VDI1	Input	External power supply, power supply for the DI8～DI15
VDI2	Input	External power supply, power supply for the DI16～DI23
VDI3	Input	External power supply, power supply for the DI24～DI31
NC		No connection

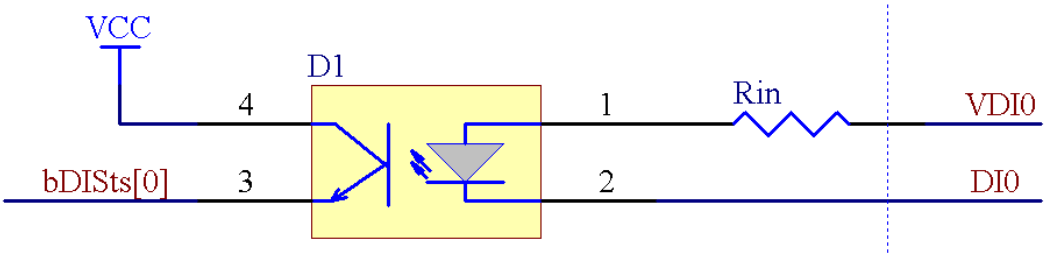


Signal Name	Type	Definition
DO0～DO31	Output	Digital output pins
DOGND0	Output	Ground of digital output

Chapter 3 Connection Ways for Input and Output

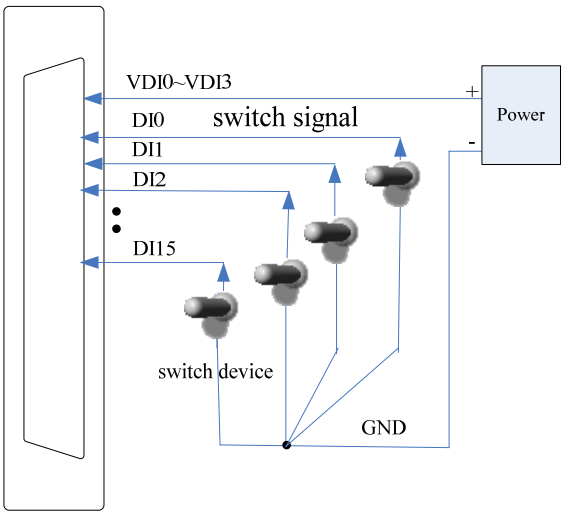
3.1 Input Principle and wiring

DI0 ~ DI31 input principles are the same, the following description the DI0, the others are the same.

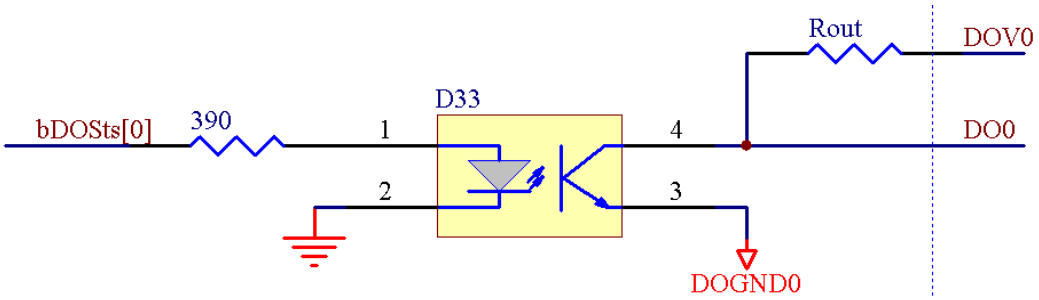


DI0 is the input signal, reference voltage is VDI0. The following is the working principle of DI0: when DI0 is high-level, there is no differential pressure between the 1 and 2 pin (namely, between the VDI0 and DI0) of the optocoupler D1, the interior does not have the electric current, therefore the light-emitting diode is nonluminous, the internal dynatron is not conduction, in other words, the 3-pin and 4-pin are not connected together, the output signal bDISts [0] is low-level. When DI0 is low-level, the result is contrary to above.

DI0~DI31 are input signals, VDI0~VDI3 are external power supply. Power supply can use 5V ~ 24V, when the input signals' high-level is 5V, then 5V power supply can be used, when the input signals' high-level is 12V, then the 12V power supply can be used, and so on.



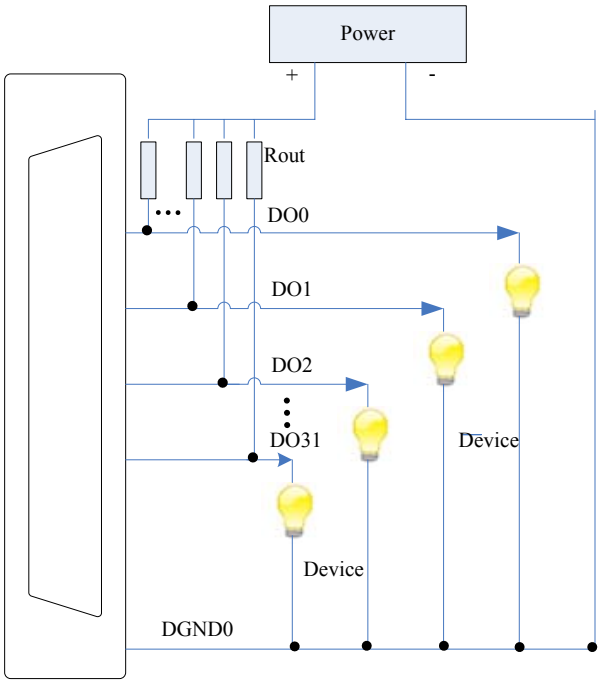
3.2 Output Principle and wiring



DO0 is the output signal, reference voltage is VDO. The following is the working principle of DO0: when bDOSts [0] is set high-level, there is differential pressure between the 1 and 2 pin of the optocoupler D33, the interior has the electric current, therefore the light-emitting diode is luminous, and the internal dynatron is conduction, in other words, the 3-pin and 4-pin are connected together, the output signal DO0 is low-level. When bDOSts [0] is low-level, the result is contrary to above.

DO0~DO31 are input signals, VDO is external power supply, DOGND0 is ground, and Rout is external resistance, the value is 4.7KΩ. Power supply can use 5V ~ 24V, when we need output 5V, we can connect VDO0 with 5V power supply, when need output 24V, we can connect VDO0 with 24V power supply, and so on.

- DO0~DO31 High Voltage: ≧ VDO
- DO0~DO31 Low Voltage: ≦0.3V



Chapter 4 Notes and Warranty Policy

4.1 Notes

In our products' packing, user can find a user manual, a PCI2310 module and a quality guarantee card. Users must keep quality guarantee card carefully, if the products have some problems and need repairing, please send products together with quality guarantee card to ART, we will provide good after-sale service and solve the problem as quickly as we can.

When using PCI2310, in order to prevent the IC (chip) from electrostatic harm, please do not touch IC (chip) in the front panel of PCI2310 module.

4.2 Warranty Policy

Thank you for choosing ART. To understand your rights and enjoy all the after-sales services we offer, please read the following carefully.

1. Before using ART's products please read the user manual and follow the instructions exactly. When sending in damaged products for repair, please attach an RMA application form which can be downloaded from: www.art-control.com.
2. All ART products come with a limited two-year warranty:
   - The warranty period starts on the day the product is shipped from ART's factory
   - For products containing storage devices (hard drives, flash cards, etc.), please back up your data before sending them for repair. ART is not responsible for any loss of data.
   - Please ensure the use of properly licensed software with our systems. ART does not condone the use of pirated software and will not service systems using such software. ART will not be held legally responsible for products shipped with unlicensed software installed by the user.
3. Our repair service is not covered by ART's guarantee in the following situations:
   - Damage caused by not following instructions in the User's Manual.
   - Damage caused by carelessness on the user's part during product transportation.
   - Damage caused by unsuitable storage environments (i.e. high temperatures, high humidity, or volatile chemicals).
   - Damage from improper repair by unauthorized ART technicians.
   - Products with altered and/or damaged serial numbers are not entitled to our service.
4. Customers are responsible for shipping costs to transport damaged products to our company or sales office.
5. To ensure the speed and quality of product repair, please download an RMA application form from our company website.

Products Rapid Installation and Self-check

Rapid Installation

Product-driven procedure is the operating system adaptive installation mode. After inserting the disc, you can select the appropriate board type on the pop-up interface, click the button【driver installation】; or select CD-ROM drive in Resource Explorer, locate the product catalog and enter into the APP folder, and implement Setup.exe file. After the installation, pop-up CD-ROM, shut off your computer, insert the PCI card. If it is a USB product, it can be directly inserted into the device. When the system prompts that it finds a new hardware, you do not specify a drive path, the operating system can automatically look up it from the system directory, and then you can complete the installation.

Self-check

At this moment, there should be installation information of the installed device in the Device Manager (when the device does not work, you can check this item.). Open "Start -> Programs -> ART Demonstration Monitoring and Control System -> Corresponding Board -> Advanced Testing Presentation System", the program is a standard testing procedure. Based on the specification of Pin definition, connect the signal acquisition data and test whether AD is normal or not. Connect the input pins to the corresponding output pins and use the testing procedure to test whether the switch is normal or not.

Delete Wrong Installation

When you select the wrong drive, or viruses lead to driver error, you can carry out the following operations: In Resource Explorer, open CD-ROM drive, run Others-> SUPPORT-> PCI.bat procedures, and delete the hardware information that relevant to our boards, and then carry out the process of section I all over again, we can complete the new installation.